BOOKS AND PERIODICALS.

The Theory and Practice of Interpolation, Including Mechanical Quadrature and other Important Problems Concerned with Tabular Values of Functions, with Requisite Tables. By Herbert L. Rice, M. A., Assistant in the office of the American Ephemeris and Professor of Astronomy in the Corcoran Scientific School, Washington, D. C. 4to cloth, 234 pages. Price, $3.50. Postage prepaid, $3.75. For sale by the author, United States Naval Observatory, Washington, D. C..

In the preparation of this treatise, the author has added to the technical literature of mathematics a work which gives a simple, practical, and comprehensive discussion of all that is useful concerning Differences, Interpolation, Tabular Differentiation, and Mechanical Quadrature, and has thereby rendered invaluable service to the practical computer. The work contains five chapters, an appendix, and eight tables. The first chapter treats of Differences; chapter II., of Interpolation; chapter III., of Derivatives of Tabular Functions; chapter IV., of Mechanical Quadrature; chapter V., of Miscellaneous Problems and Applications. The book is very beautifully printed with large type on heavy paper, and in every way makes a very good appearance. It is a work that not only every practical computer *must* have but every mathematician as well *should* have.   B. F. F.

School Arithmetic, Primary Book. By J. M. Colaw, A. M., Associate Editor of the AMERICAN MATHEMATICAL MONTHLY, Monterey, Va., and J. K. Ellwood, A. M., Principal of the Colfax School, Pittsburg, Pa., author of Table Book and Test Problems in Elementary Mathematics. 8vo. cloth, 271 pages. Price, 35 cents. Richmond, Va.: B. F. Johnson Co.

This new votary for public favor in the line of arithmetics has many points of excellence to recommend it. The authors in the preparation of this work have certainly proved that they understand the fundamental principles of sound pedagogy. The first thirty pages are devoted to giving the child an idea of comparing objects of different size. For example, on the first page we find this: "Cut splints the same length as A, B, and C," these letters referring to the pictures of sticks. "Show me the longest," "show me the next longest," "show me the shortest," "show me the next shortest," etc. By such exercises, which every child can master, it is led to simple work in numbers. The book is well written, beautifully and tastefully printed and illustrated. Teachers desiring a good primary arithmetic will do well to adopt this work.   B. F. F.

An Elementary Physics for Secondary Schools. By Charles Burton Thwing, Ph. D., Professor of Physics in Knox College, formerly instructor in the University of Wisconsin, author of Exercises in Physical Measurement, Part I., Principles, Part II., Laboratory Exercises. 8vo. cloth, 371 pages. Price, $1.20. Boston ; Benj. H. Sanborn & Co., Publishers.

During the past five years wonderful discoveries have been made in physics. These, though great as they seem, probably very feebly foreshadow those yet to be made during the first decade of the coming Twentieth century. These great discoveries, following each other in rapid succession, have made text-books written six or seven years ago obsolete. To put the principles of these discoveries clearly before the public, has necessitated the revision of all old works on physics and the writing of numerous new ones. Professor Thwing's work belongs to the latter class, and the object of its publication is to give the average student of a secondary school a book scientific, accurate, and up-to-date. The only unfavorable criticism that may be offered is that some of the illustrations lack artistic effect.   B. F. F.

Higher Algebra. By John F. Downey, M. A., C. E., Professor of Mathematics in the University of Minnesota, 8vo., cloth and leather back, 416 pages. Introduction price, $1.50. New York and Chicago: American Book Co.

This work is written for the use of students in technical schools, colleges and universities. Some of the characteristic features of this new book are: (1) The logical demonstrations, each theorem or general principle being followed by a concise logical demonstration; (2) Short processes are used instead of the longer ones in common use; (3) The subject of Maxima and Minima is discussed in a fuller and more systematic way than usual; (4) Differentiation of algebraic and logarithmic functions are introduced. Numerous exercises and problems are given in all the different subjects.   B. F. F

Holden's Elementary Astronomy. By Edward S. Holden, M. A., Sc. D., LL. D., former Director of the Lick Observatory. With over 200 illustrations. xiv+446 pages, 12mo. Price, $1.20. New York: Henry Holt & Co. 1899.

This new volume in the "American Science Series" is addressed especially to pupils who are studying the subject for the first time. The author has endeavored to overcome the difficulties of this study by a very full and gradual treatment of its elements. Elementary instruction in observation is an important feature. The book is one of exceptional interest and merit.   J. M. C.

History of English Literature. By F. V. N. Painter, A. M., D. D., Professor of Modern Languages and Literature in Roanoke College. 697 pages. Boston: Sibley & Ducker. 1899.

This work is an eminently practical text-book. It is characterized by judicious selection and wise omission. Unusual prominence has been given to the writers of the nineteenth century. The literary map, the list of books of reference, and that of "books worth reading" add much to the interest and value of the work. It is well printed and beautifully illustrated.   J. M. C.

Plane Trigonometry with Tables. By Elmer A. Lyman, Michigan State Normal School, and Edwin C. Goddard, University of Michigan. Price, $1.00. Boston: Allyn & Bacon. 1899.

The book includes those portions of Plane Trigonometry studied in high school and college classes. The general character of the demonstrations, the early introduction of inverse functions, the extended practice in the use of logarithms, the use of oral work to aid in fixing formulæ in the mind, and frequent reviews, are some of the distinctive features. The trigonometric equation has received careful treatment, and in the solution of triangles the division into cases has been abandoned.   J. M. C·

Essentials of Plane and Solid Geometry. By Webster Wells, S. B., Professor of Mathematics in the Massachusetts Institute of Technology. 407 pages. Price, $1.25. Boston: D. C. Heath & Co. 1899.

In many of its features this work is similar to the author's Revised Plane and Solid Geometry, but important improvements have been introduced. The definitions and demonstrations are characterized by clearness, brevity, and accuracy. The book abounds in well-chosen and well-arranged exercises with excellent figures and suggestions. It ranks well with the very best books of its kind.   J. M. C,

Mental Arithmetic. By Edward Weidenhamer, Ph. B. 173 pages. Cloth. Price, 35 cents. Harrisburg, Pa.: R. L. Myers &. Co. 1898, 1899.

This book begins with simple problems and proceeds by easy steps to those that are more difficult. The supply of problems is abundant, and in other respects this is a very satisfactory text.   J. M. C.

The New Complete Arithmetic. By David M. Sensenig, M. S., and Robert F. Anderson, A. M., Instructors in Mathematics, State Normal School, West Chester, Pa. 427 pages. Price, 90 cents. Boston : Silver, Burdett & Co. 1900.

This book is designed to furnist to high schools, academies, and normal schools a complete treatise suitable for grades about to finish this branch of study. Under each subject examples of different types are solved in a manner calculated to direct attention to the logical steps involved. The very full treatment of business papers is a prominent feature. J. M. C.

The Elements of Arithmetic. By Ella M. Pierce, Supervisor of Schools, Providence, R. I. 149 pages. Price, 36 cents. Boston : Silver, Burdett & Co. 1900.

This book is intended for children of the third school year and covers the fundamental processes through numbers to one hundred. The lessons are simple and are well fitted to the age of the children for whom they are intended. J. M. C.

The Wooster Arithmetic—Grade I. By Lizzie E. Wooster. 112 pages. Cloth. Price, 25 cents. Topeka, Kansas : Crane & Co. 1899.

This book is intended for pupils in the first grade, and aims to do away with too much drill work upon the blackboard. The work advances by easy steps, and the number and variety of exercises are adequate. J. M. C.

The Elements of the Differential and Integral Calculus. By J. W. A. Young, Assistant Professor of Mathematical Pedagogy in the University of Chicago, and C. E. Linebarger, Instructor in Chemistry and Physics in the Lake View High School, Chicago. 410 pages. New York ; D. Appleton & Co. 1900.

The present text is based closely upon the valuable German work of Professors Nernst and Schönflies which appeared in 1895. The fundamental principles and methods have been carefully treated in a manner that is in harmony with the more strict treatment possible in more extended treatises. The first chapter consists of an introduction to Analytic Geometry. Distinctive features are the exclusive use of the methods of limits, and the liberal use of illustrative examples from the natural sciences. The book has many points of excellence. J. M. C.

The Gospel According to Darwin. By Woods Hutchinson, A. M., M. D., of the University of Buffalo. 8vo. Paper cover. xii+241 pages. Price, 50 cents.

In this book the author has attempted to give merely a birds-eye-view of the influences affecting human hope and human happiness from the standpoint of that view of the universe and that attitude towards it which is best expressed by the term "Darwinism." In its pages are discussed in a very charming manner many of the themes that are most important to the human race. B. F. F.

We are indebted to Mr. C. M. Parker, Editor of *The School News and Practical Educator*, Taylorville, Ill., for copies of his valuable journal, containing a series of articles on Primary Number Work, by Prof. G. B. Longan.

J. M. C.

The following periodicals have been received since our last issue : *Journal de Mathématiques Élémentaires*, 15 Juillet 1900 ; *L'Intermédiaire des Mathématiciens*, Juillet 1900 ; *Notes and Queries*, September, 1900 ; *The Mathematical Gazette*, July, 1900 ; *The Educational Times*, August, 1900 ; *American Journal of*

Mathematics, July, 1900 ; *The Kansas University Quarterly*, *Proceedings of London Mathematical Society*, Vol. XXXI., *Periodico di Matematica.* J. M. C.

The American Monthly Review of Reviews. An International Illustrated Monthly Magazine, edited by Dr. Albert Shaw. Price, $2.50 per year in advance. Single number, 25 cents? The Review of Reviews Co., New York.

In the September *Review of Reviews* will be found a comprehensive treatment of the "Imperialism" issue, with particular reference to Mr. Bryan's Indianapolis speech. The editor's review of Mr. Bryan's Philippine propositions will be read with interest, alike by the adherents and the opponents of the Democratic candidate's policy. B. F. F.

The Literary Digest. A Weekly Compendium of the Contemporaneous Thought of the World. Price, $3.00 per year in advance. Single number, 10 cents. Funk & Wagnalls Co., Publishers, 30 Lafayette Place, New York.

A journal for the school and the home. In it is given a resumé of every important event in the civilized world. B. F. F.

The Cosmopolitan. An International Illustrated Monthly Magazine. Edited and published by John Brisben Walker. Price, $1.00 per year in advance. Single numbers, 10 cents. Irvington-on-the-Hudson.

Each number of this magazine is worth many times the yearly subscription price. In it culminates artistic excellence in magazine publications. B. F. F.

ERRATA.

Vol. VII, No. 4, page 104, second solution, the last line but two, for "37.7" read 31.5.

On line below the one just referred to, for "74.5" read 73.

On page 110, of the same number, for line 6, read $-\dfrac{8abr^2}{3c\sqrt{(a^2-r^2)}}F(e,\ \tfrac12\pi)$.

On same page, instead of line 8, read $-\tfrac{8}{3}ab\sqrt{(a^2-r^2)}F(e,\ \tfrac12\pi)$.

In No. 5, page 146, Problem 111, Calculus, for "of a hyperboloid or of a paraboloid," read, of a paraboloid or of a paraboloid.